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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/005,259	12/04/2001	Keiji Hayashi	2803.66027	2802

7590 11/05/2003
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EXAMINER

MCCAMEY, ANN M

ART UNIT	PAPER NUMBER
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2833

DATE MAILED: 11/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/005,259

Applicant(s)

HAYASHI ET AL.

Examiner

Ann M McCamey

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 September 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8, 10-22 and 28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10-22 and 28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Inventorship

In view of the papers filed 9/11/03, the inventorship in this nonprovisional application has been changed by the deletion of Takeshi Gotoh, Akio Sotokawa and Seiji Hachisuka.

The application will be forwarded to the Office of Initial Patent Examination (OIPE) for issuance of a corrected filing receipt, and correction of the file jacket and PTO PALM data to reflect the inventorship as corrected.

Election/Restrictions

Applicant's election without traverse of claims 1-8, 10-22 and 28 in Paper No. 10 is acknowledged.

Information Disclosure Statement

The information disclosure statement filed 12/4/01 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each U.S. and foreign patent; each publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

The information disclosure statement filed 12/4/01 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is

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presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. It has been placed in the application file, but the information referred to therein has not been considered.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5, 7, 10, 12-18, 20-22 and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Sekiguchi et al. (US 4,978,890).

Regarding claims 1-7, Sekiguchi et al. discloses a backlight comprising a discharge tube 10, a reflector 20, and a non-metal, adhesive heat conduction member 70 attached/adhered to said reflector in contact with a part of said discharge tube, so that a part of said discharge tube is locally cooled by said heat conduction member;

a heat radiation member 30 provided in contact with at least one of said heat conduction member and said reflector;

an electrically controllable cooling member 50 is provided in contact with said reflector.

Regarding claims 10, 12-15, 18, 20-22 and 28, Sekiguchi et al. discloses a backlight comprising a discharge tube 10 containing mercury in which almost all the

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liquid mercury except for an amount of gaseous mercury at the time of discharge is collected at a first position apart from an end of said discharge tube, and a cooling device 30 for cooling said first position of said discharge tube;

a reflector 20;

wherein said discharge tube has electrodes 17a at opposite ends thereof, and said first position is located within a range spaced apart by $10D$ or by at least $0.25L$ from a tip of said electrode at each end of said discharge tube, where an inner diameter of said discharge tube is D and a distance between the electrodes at opposite ends of said discharge tube is L (Fig. 2);

wherein said first position possesses a limited portion in said range;

wherein said mercury comprises mercury particles having a size of not greater than 0.2 mm (inherent);

wherein said discharge tube contains a rare gas, and said rare gas does not contain argon;

wherein said cooling device comprises a heat conduction member 70 positioned to come into contact with said first position of said discharge tube, or positioned in the proximity of said first position of said discharge tube;

wherein said cooling device includes a cooling capacity varying mechanism 50;

wherein said cooling device includes a movable heat conduction member 70 ("movable" only requires ability to move).

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Claim 8 is rejected under 35 U.S.C. 102(b) as being anticipated by Davis (US 3,777,199).

Davis discloses a backlight comprising a plurality of discharge tubes (Column 6, Line 3), a reflector 30 covering said discharge tubes for reflecting light radiated from said discharge tubes, and blowing means 36 for blowing air to a part of said discharge tubes between said discharge tubes.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sekiguchi et al. in view of Loda et al.

Sekiguchi et al. discloses the invention substantially as claimed, but does not disclose the material exhibiting a cooling function *by phase transition*. Loda et al. teaches a phase transition cooling mechanism. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a material exhibiting a cooling function by phase transition for efficient cooling.

Claims 11, 16, 17 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sekiguchi et al.

Regarding claims 11 and 19, Sekiguchi et al. discloses the invention substantially as claimed, but does not disclose a light guide plate nor blowing means. Both features are well-known in the art (See, Spec., Page 1, Line 22; Sekiguchi et al., Column 1, Lines 23-27). It would have been obvious to one having ordinary skill in the art at the time the invention was made to include a light guide plate and blowing means to increase light intensity while maintaining acceptable ambient temperatures.

Regarding claim 16, Sekiguchi et al. discloses the invention substantially as claimed, but does not disclose the discharge tube comprising a carbon nanotube. Carbon nanotubes are a well-known electron emission source used for discharge tubes. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a carbon nanotube to allow for miniaturization of the backlight structure.

Regarding claim 17, Sekiguchi et al. discloses the invention substantially as claimed, but does not disclose the cooling device comprising a chromic material. Chromium is a known material with conductive properties. It would have been obvious to one having ordinary skill in the art at the time the invention was made to choose a chromic material for the cooling device because of its conductive properties to allow for efficient heat dissipation.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ann M McCamey whose telephone number is (703) 305-3422. The examiner can normally be reached on M-F 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paula A. Bradley can be reached on (703) 308-2319. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

AMM
October 29, 2003



RENEE LUEBKE
PRIMARY EXAMINER